

# THREE NEW CAVE SPIDERS OF GENERA *GAMASOMORPHA* AND *MASIRANA* FROM JAPAN

Toshihiro KOMATSU

## *Gamasomorpha kusumii* n. sp.

(Japanese name : Kusumi-danigumo)

Loc. and Date : Senjōjiki cave, Ehime Prefecture. Nov. 12th, 1961. 1 adult female

Collector ; - S. KUSUMI

Measurements in millimetres : -Total length 1.6 ; cephalothorax 0.7, width 0.6 ; abdomen 0.9, width 0.45

Appendages \ Segments	Total	Femur	Patella	Tibia	Metatarsus	Tarsus
1st leg	1.53	0.42	0.23	0.38	0.30	0.20
2nd leg	1.43	0.42	0.23	0.31	0.26	0.21
3rd leg	1.23	0.36	0.18	0.23	0.26	0.20
4th leg	1.73	0.44	0.23	0.41	0.40	0.26
Palp	0.57	0.20	0.07	0.13		0.17

## Measurements in ratio

Major diameter of the anterior eye	8.5
" posterior lateral eye	7.0
" posterior median eye	7.5
Minor diameter of the posterior median eye	5.5
Interval of the anterior eyes to each other	9.5
" anterior eye and the posterior median eye	1.5
" anterior eye and the posterior lateral eye	1.5
Interval of the posterior median eye and posterior lateral eye	4.0
Length of the clypeus	13.5

Color (in alcohol) : - Cephalothorax brown. Chelicerae brownish yellow. Maxillae, sternum pale yellow. Legs yellow. Dorsal chitinous scutum of the abdomen brownish yellow. And ventral scuta yellow. Hairs and spines grey.

Cephalothorax : - Carapace of normal height behind has a characteristic side view (Pl. VI, Fig. 3). Longer than broad and cephalic part narrowed in front. Rough surface with hairs. Median fovea and radiating grooves absent. Carapace

jointed to sternum by chitinous strips passing between the coxae.

Eyes six. Posterior row recurved. Anterior eye is the largest, and posterior lateral eye is the smallest. Posterior median eyes nearly touching. The distance between the anterior median eye longer than their diameter. Posterior median eyes nearly touching. The distance between posterior median and posterior lateral eye is as long as the major radius of posterior median eye, and less than the minor diameter. Length of the clypeus is less than the length of ocular area.

Chelicerae rather small. Maxillae inclined inwards (Pl. VI, Fig. 4). Labium rather triangle in shape. Sternum convexed, longer than broad 22 : 20 in ratio, and anterior margin procurved weakly. Posterior part not so pointed, but 4th coxae separated by about seven-ninths their length. Leg stout ; femora are very thick. Distinct onychium has 2 superior claws with 2 rows of teeth. Inferior claw absent but with several hairs. Order of length 4123. Each tibia of I, II with 3 pairs of ventrolateral spines, and an unpaired proventral spine in apical part. Each metatarsus of I, II with 2 pairs of ventrolateral spines.

Abdomen : Very much longer than broad 2 : 1 in ratio. Dorsal chitinous scutum with no pattern but long hairs, and posterior edge pointed. Total length of ventral chitinous scuta is about 5/6 as long as the length of the abdomen. Anterior and posterior spinnerets with very short 2nd joints. Anterior spinnerets separated from each other by about  $\frac{1}{2}$  their diameter.

Male is unknown.

This species is distinguishable from *Gamasomorpha cataphracta* KARSCH and *Gamasomorpha karschi* BÖS. et STR. by shape and pattern of abdomen, ventral scuta, length of the tibia and the metatarsus of 1st legs, and others.

Acknowledgments : The writer greatly appreciates the help of Mr. S. KUSUMI and Mr. M. KIUCHI, who kindly presented many cave spiders from the Island of Shikoku.

### *Masirana akahanei* n. sp.

(Japanese name : Akahane-hinamashiragumo)

Loc. and date : Furō cave, Tokyo. July 31st, 1962. 1 adult male

Collector : - Toshihiro KOMATSU

Measurements in millimetres : - Total length 1.8 ; cephalothorax 0.85, width 0.70 ; abdomen 1.00, width 0.61

Segments Appendages	Total	Femur	Patella	Tibia	Metatarsus	Tarsus
1st leg	6.83	1.85	0.26	2.07	1.57	1.07
2nd leg	5.49	1.52	0.30	1.59	1.15	0.93
3rd leg	4.66	1.30	0.30	1.22	1.03	0.81
4th leg	6.26	1.78	0.26	1.89	1.41	0.93
Palp	1.29	0.48	0.22	0.26		0.33

### Measurements in ratio

Major diameter of the 1st eye	11.0
" the 2nd eye	10.5
" the 3rd eye	10.0
Interval of the 2nd eyes to each other	14.0
" the 1st and the 3rd eye	15.0
" the 2nd and the 3rd eye	5.2
Width of the ocular area	26.0
Length of the ocular area	29.0
" the clypeus	about 33.0

Color (in alcohol) : - Cephalothorax yellowish brown. Chelicerae, maxillae, sternum and labium also yellowish brown. Legs are brownish yellow. Abdomen dull lemon yellow. Hairs are grey, and spines black.

Cephalothorax longer than broad. Cephalic part narrowing in front. Needle-shaped median fovea is black in color. Cephalic suture and radiating grooves present but weak.

1st eye is the largest, and 3rd eye is the smallest. Vertical axes of the 2nd eyes intersect backwards to each other. 3rd eyes also intersect backwards. Interval of the 2nd eyes to each other equals about 1.3 times the major diameter of the 2nd. Interval of the 1st and 3rd eye equals about  $\frac{3}{2}$  the major diameter of the 3rd. Interval of the 2nd and 3rd eye equals about  $\frac{1}{2}$  the major diameter of the 3rd. Clypeus longer than the length of the ocular region.

Anterior margin of the fang furrow is armed with 10 teeth. Posterior margin is armed with 5 little teeth at a distance from the fang.

Maxillae longer than broad. Interval of the outer apical ends (endites) to each other shorter than the interval of the outer ends of the coxae. Labium as long as broad and rebordered. Anterior margin recurved. Sternum as long as broad, and its hind part is prolonged into the 4th coxae, hind part with hairs. Legs slender, order of the length 1423. The femur of the 1st leg with about ten dorsal bristles. The femur of the 2nd leg with two or three bristles. Palp ; patella < tibia < tarsus. Tibia with 3 acoustic setae, and its side armed with a very strong spine. Tip

with an acute-angled spine and a funneled projection. Palpal organ simple, length of the genital bulb equals twice the width. Abdomen oval, with grey hairs.

This species allied to the *Masirana nippara* KOMATSU, 1957. The difference between these 2 species may be tabled thus ;

<i>M. nippara</i>	<i>M. akahanei</i>
Interval of the 2nd and 3rd eye is more than the major diameter of the 3rd.	Interval of the 2nd and 3rd eye is less than the major diameter of the 3rd.
Maxillae : Interval of the outer ends of the coxae as wide as the interval of the outer apical ends of the endites.	Maxillae : Interval of the outer ends of the coxae wider than the interval of the outer apical ends of the endites.
Vertical axes of the 3rd eyes run parallel.	Vertical axes of the 3rd eyes intersect backwards.

Occurrence : Furō cave, this species lives in the dimly lit place near the entrance. He makes a single dome web 11 cm long on the concavity of the wall.

### *Masirana kosodeensis* n. sp.

(Japanese name : Kosode-hinamashiragumo)

Loc. and Date : - Kosode cave, Yamanashi prefecture, Aug. 8th, 1962. 1 adult male and 2 adult females

Collector : - Toshihiro KOMATSU

#### I Adult male

Measurements in millimetres : - Total length 1.9 ; cephalothorax 0.8, width 0.8 ; abdomen 1.2, width 0.95

Color (in alcohol) : - Cephalothorax yellowish brown. Chelicerae reddish brown. Maxillae, labium brown. Sternum yellowish brown. Abdomen dull yellowish white. Legs yellowish brown. Hairs and bristles are grey.

Appendages \ Segments	Total	Femur	Patella	Tibia	Metatarsus	Tarsus
1st leg	7.54	2.12	0.31	2.31	1.69	1.15
2nd leg	6.12	1.77	0.31	1.81	1.31	0.92
3rd leg	5.13	1.46	0.29	1.38	1.15	0.85
4th leg	7.01	2.04	0.31	2.08	1.54	1.04
Palp	1.35	0.46	0.23	0.31		0.35

## Measurements in ratio

Major diameter of the 1st eye	11.0
" 2nd eye	11.0
" 3rd eye	8.5
Interval of the 2nd eyes to each other	17.0
" 1st and the 3rd eye	18.0
" 2nd and the 3rd eye	8.0
Width of the ocular area	30.0
Length of the ocular area	34.0
Length of the clypeus	about 53.0

Cephalothorax as long as broad. Cephalic part narrowing in front. Median fovea is needle-shaped and black in color. Cephalic suture, radiating grooves present. 1st eye as large as 2nd eye, and 3rd eye is the smallest. Vertical axes of the 2nd eyes intersect backwards to each other, but the 3rd eyes run parallel. Interval of the 2nd eyes to each other equals about 1.5 times the major diameter of the 2nd. Interval of the 1st and the 3rd eye equals about twice the major diameter of the 3rd. Interval of the 2nd and the 3rd equals about the major diameter of the 3rd. Clypeus longer than the length of the ocular region.

Anterior margin of the fang furrow armed with 10 teeth, distal one is the smallest. Posterior margin is armed with 6 little teeth at a distance from the fang.

Maxillae longer than broad. Anterior margin is very broad. Interval of the outer apical ends of the endites to each other wider than the interval of the outer ends of the coxae.

Labium as long as broad and rebordered. Anterior margin recurved. Sternum longer than broad, 32 : 27 in ratio, and its hind part is prolonged into the 4th coxae, with long bristles. Legs long and weak ; order of length 1423. The femur of the 1st leg with several dorsal bristles. Palp hairy. Tibia with 3 acoustic setae and a large spine. Tip of the tibia with an acute-angled spine and a funnel-shaped projection. Length of the genital bulb equals twice the width. Abdomen long oval, with grey hairs.

## II Adult female

Total length 2.4 mm, cephalothorax 0.9 mm, abdomen 1.5 mm. Palpal claw with 2 teeth. Maxillae rather normal in shape.

This species allied to the *Masirana nippara* KOMATSU 1957. The difference between these 2 species may be tabled thus ;

<i>Masirana kosodeensis</i> (♂)	<i>Masirana nippara</i> (♂)
Femur of the 1st leg is more than twice the length of cephalothorax.	Femur of the 1st leg is less than twice the length of cephalothorax.
Cephalothorax as long as broad.	Cephalothorax longer than broad.
Interval of the 1st and 3rd eye more than twice the diameter of 3rd eye.	Interval of the 1st and 3rd eye less than twice the diameter of 3rd eye.
Hind part of the sternum with long bristles.	Hind part of the sternum with hairs.
Distance of the outer apical ends of endites to each other is wider than the distance of outer ends of coxae.	Distance of the outer apical ends of endites to each other is rather closer than the distance of outer ends of coxae.

Males of all species of *Masirana* have many characters in common with each other, and easily distinguishable from *Leptoneta* and *Sarutana*.

The difference between these genera may be tables thus :

<i>Leptoneta</i>	<i>Masirana</i>	<i>Sarutana</i>
Maxillae of both sexes normal in shape, and tips of endites are always pointed.	Tips of endites of male are very broad, but females are rather normal in shape.	Same as <i>Masirana</i> . Female is unknown.
Male : Tibia of palp with one or two spines.	Male : Tibia of palp with an acute-angled spine and a funnel-shaped projection.	Male : Tibia of palp with two spines and a funnel-shaped projection.
Male : Femur of palp with no spine.	Same as <i>Leptoneta</i> .	Male : Femur of palp with many spindle-shaped spines.

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Plate VI 1-5 *Gamasomorpha kusumii* n. sp. female

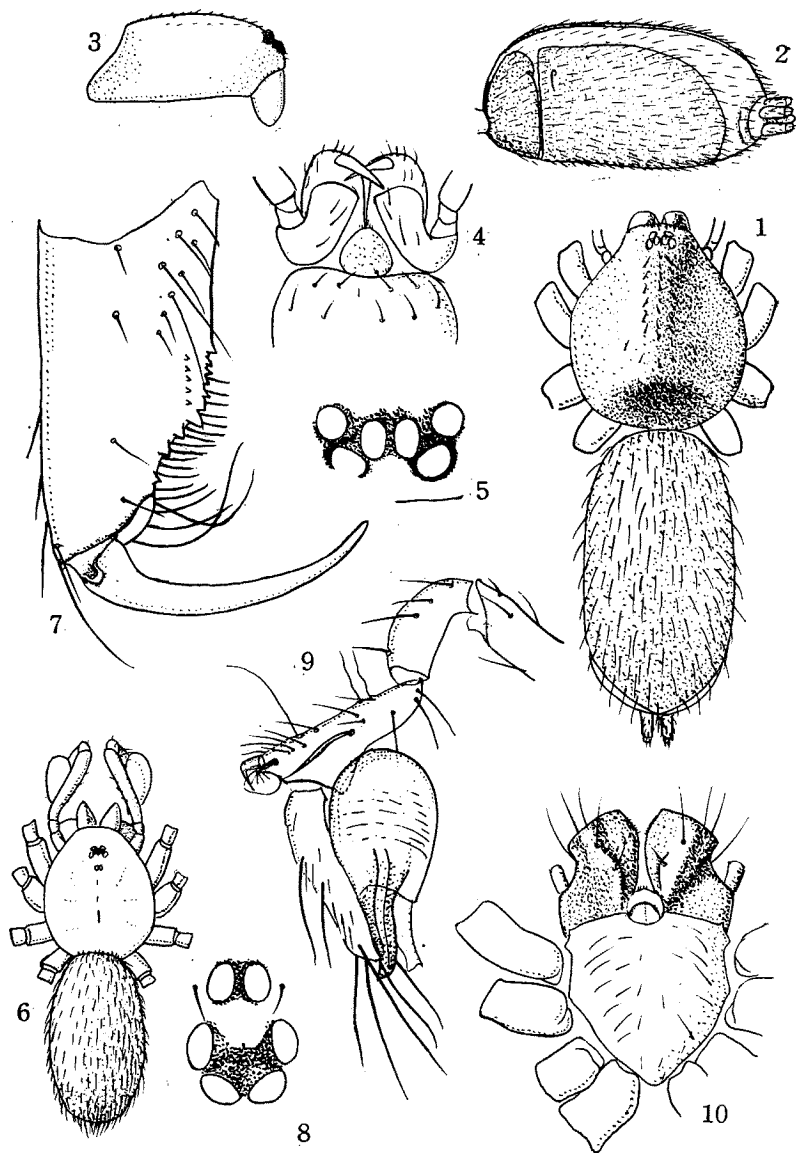
1. Dorsal aspect.
2. Ventrolateral aspect of abdomen.
3. Lateral aspect of carapace.
4. Maxillae, labium, sternum.
5. Eyes and clypeus.

6-10 *Masirana akahanei* n. sp. male

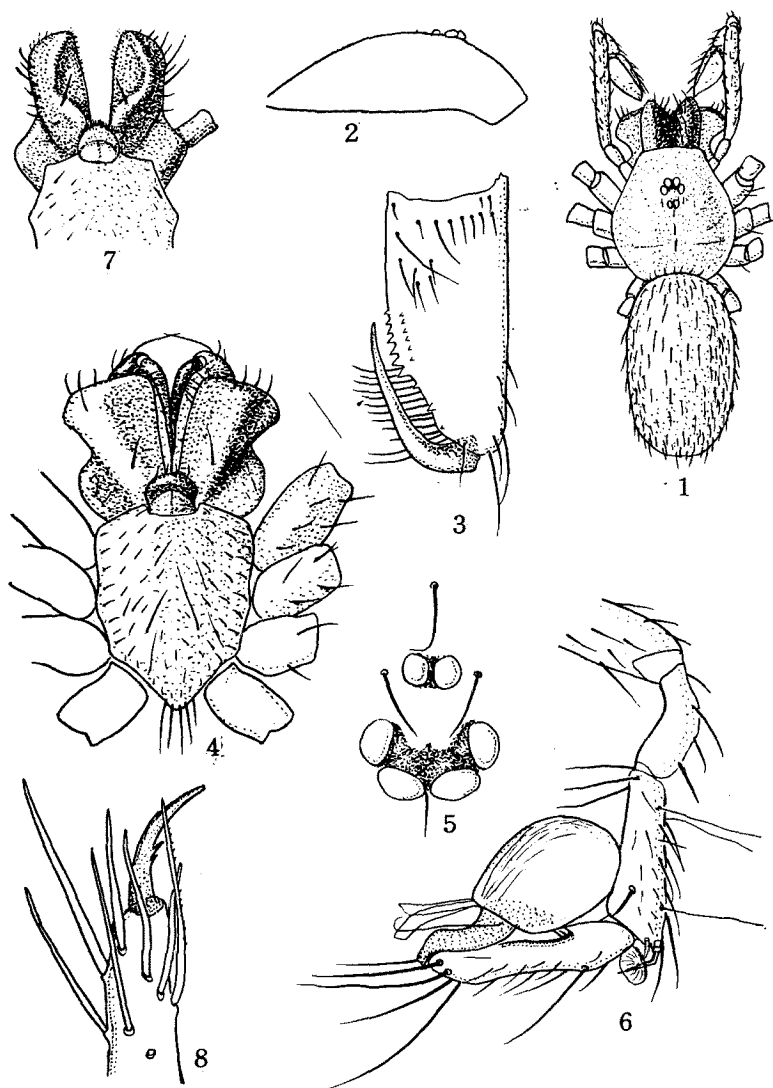
6. Dorsal aspect.
7. Inner aspect of chelicera.
8. Eyes.
9. Palp.
10. Maxillae, labium, sternum.

Plate VII *Masirana kosodeensis* n. sp. 1-6...male 7,8...female

1. Dorsal aspect.
2. Lateral aspect of carapace.
3. Chelicerae.
4. Maxillae, labium, sternum.
5. Eyes.
6. Palp.
7. Maxillae, labium, sternum.
8. Palp.



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